ZKL Hanušovice, a.s.		
GUIDELINE		
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Title:

GUIDELINE OF REQUIREMENTS FOR THE SUPPLIER

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1. PREAMBLE

This Quality Guideline represents a binding specification of the general technical and organisational conditions and processes between ZKL Hanusovice a.s. (hereinafter referred to only as "ZKL") and the Supplier, which are necessary to achieve the objectives of ZKL (mainly in the area of Quality) which the Parties strive for.

The quality of the ZKL suppliers has direct impact on the quality of our products. This fact forms the basis for the minimum requirements described in the Guideline for the Supplier. The Supplier is responsible for the quality of its deliveries. The mission of this Guideline is to contribute to joint Quality planning and thus secure the relations between the suppliers and ZKL.

This Guideline is posted on the ZKL website and all suppliers are obliged to conform to the requirements of this Guideline. This is a commitment they undertake upon any conclusion of a general agreement.

If Supplier is unable to perform any of the requirements stipulated in this Guideline, it is obliged to notify the ZKL Purchasing Department which, in cooperation with the ZKL Quality Department, decides on the necessity of fulfilling the requirement by the Supplier.

2. PROTECTION OF BUSINESS SECRETS AND OWNERSHIP RIGHTS

The Supplier is obliged to ensure and undertake to keep silent about all information obtained (including the business and technical details) with which it becomes familiarised within the contractual relationship with ZKL. Keeping silent includes the non-disclosure to third parties of information obtained unless approved in writing by ZKL. This non-disclosure of information obtained does not apply to the information necessary for achieving the contractual relation with ZKL (e.g. for a ZKL subcontractor that supplies/will supply a ZKL supplier a product which forms a part of the ZKL Supplier product).

ZKL accepts reasonable limitations by the Supplier in order to ensure its operating secrets as long as the reliability and competence of the Supplier, in terms of the facts found during audits and other visits/negotiations of ZKL, is proved in another manner. ZKL undertakes to keep silent about the information obtained from audits and other visits/negotiations. Keeping silent includes the non-disclosure to other organisations of information obtained (this does not apply to a ZKL customer that is/will be delivered a product partially consisting of the ZKL Supplier's product).

The Supplier undertakes not to intervene with the ownership rights of ZKL or any of its customers within the contractual relation with ZKL. The Supplier shall indemnify ZKL and its customers should a claim arise from misappropriation of the ownership rights, in accordance with the valid legislation.

The Supplier guarantees that, prior to the commencement of the deliveries of products, it shall notify ZKL of the ownership rights of the Supplier or licences and their use in respect of the delivered product.

3. SUPPLIER'S MANAGEMENT SYSTEM

The primary requirement of ZKL for the Supplier is certification according to ISO 9001:2000; within the 2008/2009 time horizon, certification according to ISO/TS 16 949:2002 is required. The Supplier undertakes to adhere to the principles of environmental protection (in accordance with ISO 14 001:2005 and the legal regulations). The Supplier further undertakes to use the Management System constantly in accordance with the aforementioned standards and requirements of the Customer, as defined in this Guideline, as supplementary specifications.

4. AUDITS WITH THE SUPPLIER

ZKL is entitled to find out through an audit whether the provisions to assure Quality (in the phase of "pre-series" Quality Planning or in the phase of Series Deliveries) with Supplier ensure the fulfilment of ZKL's requirements. As a standard, ZKL executes Process Audit with the Supplier according to the catalogue of queries (see Attachment No. 1), or Product Audit, as the case may be, or an audit focused on a specific issue/problem area. ZKL informs the Supplier in due time about the execution of a planned audit (at least 4 weeks in advance), but ZKL notifies the Supplier of an unplanned audit (e.g. audit of a problem area) at least 2 days in advance.

The Supplier undertakes to enable the execution of an audit by ZKL or any of its customers and to appoint competent people of the Supplier (including convenient office premises) for successful execution of the audit.

ZKL reserves the right to request the execution of a self-audit by the Supplier according to the catalogue of queries (see Attachment No. 1), and sending the result of this self-audit as specified in Attachment No. 2. The self-audit is intended for the demonstration of the Supplier's capability and has to be understood as a tool of continuous improvement. The requirement for the execution of the self-audit shall be notified by ZKL to the Supplier 2 weeks in advance at the latest and the Supplier is obliged, upon accomplishment of the self-audit, to send the result to the ZKL auditor within 7 calendar days.

To be able to evaluate the Supplier as a Supplier competent in terms of Quality, it has to achieve an "A" rating within the self-audit. If, during the self-audit, the Supplier achieves a "B" or "C" rating, it is obliged to send, together with the result of the self-audit, a programme of corrective measures the target state of which must be the achievement of an "A" rating.

Only then, upon the demonstration of the efficiency of its corrective improvement measures through the self-audit with the objective of an "A" rating, shall ZKL check this self-evaluation by executing the Process Audit and Product Audit by the ZKL auditor.

ZKL retains the right, in the case of any critical projects and unacceptable reaction time of the Supplier, to execute a Process Audit and Product Audit at any time.

The Supplier shall bear the costs of the audit performed by the ZKL auditor in any of the cases specified below:

- if a Process Audit has to be performed by the ZKL auditor based on any unacceptable reaction time,

- if unplanned audits have to be performed by ZKL due to any issues with the deliveries or Supplier Quality,
- If the Supplier gives itself an unrealistic self-rating (classification in the "A" group) which is not confirmed by ZKL's Process Audit,
- if an "A" rating is not achieved within an acceptable time and therefore an additional audit has to be performed by the ZKL auditor.

Escalatory levels

In the case of repeated burden and unfulfilled claims, and in case of failure to meet ZKL's requirements regarding the improvement programme, adhering to the deadlines or in case of failure to meet the set objectives ("A" rating), the following escalatory principle shall be followed:

1st escalatory degree

Testing the measures that came out of the self-audit with the Supplier by means of a Product & Process Audit by the ZKL auditor.

2nd escalatory degree

Dialogue on "Quality" topic with competent people with the involvement of the company management.

3rd escalatory degree

Dialogue on "Quality" topic at the top management level or shifting to the "C" group, as the case may be.

5. QUALITY ASSURANCE BEFORE SERIES MANUFACTURE

5.1 QUALITY PLANNING

The quality of the required products is, to the decisive extent, determined in the Product/Process development. The Supplier undertakes to use Project Management with Quality Planning (according to the APQP, VDA 4.3 manuals or other similar handbooks) in the phase of Product/Process development and allow ZKL to participate in the project. ZKL undertakes to provide the Supplier in due time with a clear Product Specification (e.g. drawings/other data).

ZKL requires that the Supplier has available efficient preventive methods for Quality Planning within the Project Management to assure Quality in the phase of Product/Process development. The said methods must contain mainly the following elements:

- Manufacturability analysis – retesting whether the demanded and required product can be delivered in the required quality, quantity and term. The task of the Supplier is to negotiate any unclear and specifying requirements with the ZKL Purchasing Department and thus ensure sufficient information in order to test the manufacturability.
- *FMEA* - process FMEA of all new and modified manufacturing processes, or any other suitable analysis of manufacturing process risks.
- *Product & Process Management Planning (Control Plan)* – the scope of the management (inspections) of Product and Process - CO - has to be defined (controlled characteristics of Product and Process), HOW OFTEN (frequency of checks), HOW MANY (scope of the characteristics checked), BY WHAT (gauge), HOW (checking method), WHO (person performing the inspection),

OUTPUT (records of the inspection performed), REACTION (description of measures executed in the event of a non-conforming inspection).

- *Measuring System (testing means) Planning* – the trial methods have to be specified in Planning (their type, quantity, distinctiveness, etc.), the method and environment of measuring, and a sufficiently low uncertainty of the measuring system results needs to be ensured by means of suitable analyses of the measuring system (e.g. the MSA - QS 9000, VDA 5 manual).
- *Special characteristics* – for critical and significant Product/Process characteristics, Supplies needs to demonstrate achievement of the stated capability values (P_p, P_{pk} / c_p, c_{pk}).
- *Planning processes and operation means* – manufacturing processes and operational features have to be planned by the Supplier to the Quality and Capacity required. The capability of the working funds has to be demonstrated by Supplier (c_m, c_{mk}).
- *Packaging planning* – the packaging must ensure that any damage to the product during transport and storage is prevented. In the packaging planning, Supplier also ensures the environmental requirements according to the relevant legal and other regulations.

5.2 PRODUCT APPROVAL PROCESS

The purpose of the approval process is

- to determine whether the Supplier has understood all the specified requirements correctly,
- to ensure that the process has the potential to manufacture products in accordance with the requirements specified in the course of the ordinary production run.

Upon product approval, the Supplier is obliged to submit (unless agreed otherwise with the ZKL Purchasing Department):

- a report with measured specifications and measured values (if needed, the report includes verification of the product dimensions, properties of the product material, function, appearance, reliability/service life, weight, noise, dust, etc. – this verification demonstrates the fulfilment of specified requirements on the product),
- product samples:
  - 3 items – for countable products (e.g. plastic parts from every point of the mould),
  - 1 litre/1 kg – for uncountable products – liquid, loose and solid products (e.g. glue, powder, solid lubricant),
  - if the manufacture and separate delivery of the product samples is uneconomical and impractical, they are taken from the first series delivery in ZKL – this only applies if approval is granted by the ZKL Purchasing Department,
- information on entering the data about the product in the IMDS, or the safety data sheet of the product,
- or potential additional requirements specified by the ZKL Purchasing Department (related to the Product Approval Process according to VDA 2 or PPAP – e.g. demonstration of the preliminary process capability for special characteristics).

If the products are manufactured with the use of multiple tools, multiple moulds etc., the report has to contain the results of the verification of every position/point of the tool, mould, etc. and the product samples must also be submitted from every position/tool point, mould point, etc. (including the identification of the positions on individual samples).

The parts intended for product approval must be manufactured under fully serial conditions (serial tools, methods, environment, machines, material, etc.).

The Supplier has to submit the aforementioned requirements of the ZKL Purchasing Department before the first series delivery, or within the first series delivery and further always in the cases specified below:

- for new parts,
- when production at the Supplier's is relocated to another place,
- if the Supplier's production conditions change,
- if the Supplier's deliveries or production are discontinued for more than 12 months,
- if the sub-supplier of materials (product) changes,
- in the event of technical modifications of the material (product).

The Supplier is responsible for the submission of updated drawings and supplementary specifications related to the products delivered (safety data sheets, material sheets, standards of suppliers, etc.) in the event of any product modifications. The Supplier is further responsible for initiation of the change procedure by the Supplier.

The presented samples are verified by the Quality Management Department and the result of the Quality Product Release is specified as follows:

- *"released"* – no deviations from the tested parameters have been found
- "*conditionally released*" – only deviations from the tested parameters have been found that do not affect the safety and functionality of the part/final product utilisation or assembly - followed by the evaluation of the deviations and decision on the necessity to adopt a corrective measure or potential implementation of suitable measures at the Supplier's.
- *"rejected"* – deviations from the tested parameters have been found that do affect the safety and functionality of the part/final product utilisation or assembly – repeated quality release is necessary upon the implementation of the measures at the Supplier's and the submission of new product samples.

5.3 REQUIREMENTS ON SPECIAL CHARACTERISTICS BEFORE SERIES MANUFACTURE

For special characteristics (critical - "C/C" and significant - "S/C") the suppliers need to demonstrate the preliminary capability of the process as a part of the Product Approval Process.

A) Preliminary (short-term) Process Capability for variable characteristics

- for the analysis of the preliminary process capability the following have to be obtained:
  - at least 100 measured data (100 products or 100 sections in the case of continuous products – e.g. wires/conductors),
  - of a production batch of a minimum size of 300 products (does not apply for continuous products),
  - of at least 25 samples – logic sub-groups (does not apply for continuous products),
- for the preliminary process capability analysis, the technologies specified in the last issue of the SPC - QS 9000 manual will be used,
- for the division of data probability outside the usual division, one of the options listed below will be applied to achieve the preliminary process capability index determination (see e.g. "Evaluation of production capability from A to Z – DTO Ostrava - Josef Tošenovský - 1996" for more details):
  - ascertain the classification of the measured data and find the limiting interval value for quality division, where there is 99.73% of the values (this procedure requires a deeper knowledge of the

probability theory, since finding the division type need not be easy, especially for a low number of values),

- carry out the transformation of the measured data to achieve an approximately normal division, then proceed in the manner described for normal division and finally execute reverse transformation (the difficulty of this path lies in finding a suitable transformation),
- select a certain type of probability division as an approximation for the relevant values, then ascertain the necessary values limiting the interval in which there is 99.73% of the values – upper limit (U_p) = 0.135%, lower limit (L_p) = 99.865%, the following calculations will be used (this procedure is most user–friendly):

$$P_p = \frac{USL - LSL}{U_p - L_p} \qquad P_{pU} = \frac{USL - \tilde{X}}{U_p - \tilde{X}} \qquad P_{pL} = \frac{\tilde{X} - LSL}{\tilde{X} - L_p} \qquad P_{pk} = min(P_{pU}; P_{pL})$$

- the acceptance criteria for the preliminary (short-term) process capability:
  - table with decisive criteria:

Characteristic	*Result*	*Interpretation*
Process that looks statistically stable (controlled)		
"C/C"	P_p, $P_{pk} \geq 2.00$	The process probably meets the ZKL requirements. Once the product has been approved, commence production and proceed according to the control plan.
"S/C"	P_p, $P_{pk} \geq 1.67$	
"C/C"	$1{,}67 < P_p$, $P_{pk} < 2.00$	The process need not meet the ZKL requirements. Once the product has been approved, commence production and pay attention to the characteristics until $C_{pk} \geq 1.33$ has been achieved.
"S/C"	$1.33 < P_p$, $P_{pk} < 1.67$	
"C/C"	P_p, $P_{pk} < 1.67$	The process does not meet the ZKL requirements. High importance must be assigned to improvement of the process and a plan of corrective measures must be worked out and recorded. Increased checks or tests are required (for the "C/C" critical characteristics of the product 100% inspection must be in place), until $C_{pk} \geq 1.33$ has been achieved for the "S/C" characteristics, or $C_{pk} \geq 1.67$ for the "C/C" characteristics.
"S/C"	P_p, $P_{pk} < 1.33$	
Process that looks statistically unstable (uncontrolled)		
"C/C" "S/C"	---	Depending on the nature of the instability, the process does not have to meet the ZKL requirements. Special causes should be identified, evaluated and removed, where possible. Until $C_{pk} \geq 1.33$ has been achieved for the "S/C" characteristics, until $C_{pk} \geq 1.67$ has been achieved for the "C/C" characteristics, or unless the customer is satisfied, 100% inspection has to be applied, along with more intense selections of SPC. High importance must be assigned to the improvement of the process and a plan of corrective measures must be worked out and recorded.

- Confidential interval for 90% reliability/probability of the calculated values has to be stated for the calculated absolute P_p, P_{pk} values (e.g. in the form as follows: "$P_{pk\ lo} \leq P_{pk} \leq P_{pk\ Up}$).

B) Preliminary (short-term) Process Capability for attributive characteristics

- at least 100 consecutive measured data (100 products or 100 sections in the case of continuous products – e.g. wires/conductors) have to be obtained for analysis of the preliminary process capability,
- the evaluating indicator is the PPM or % of non-conforming products (such products are considered non-conforming for these criteria, for which failure to meeting the specifications for the "C/C" or "S/C" characteristics were detected),
- the acceptance criteria for the preliminary (short-term) process capability:
  - table with decisive criteria:

Characteristic	*PPM*	*% of non-conformity*	*Interpretation*
"C/C" "S/C"	< 10,000	< 1%	The process probably meets the ZKL requirements. Once the product has been approved, commence production and proceed according to the control plan.
	< 50,000	< 5%	The process need not meet the ZKL requirements. Once the product has been approved, production can be initiated, whilst attention needs to be paid to the characteristics until the target value of internal PPM < 1,000 or a % of non-conformities < 0.1% is achieved in the course of series production (unless agreed otherwise with respect to the technical capacities of the production).
	≥ 50,000	≥ 5%	The process does not meet the ZKL requirements. High importance must be assigned to the improvement of the process and a plan of corrective measures must be worked out and recorded. Until the target value of internal PPM < 1,000 or a % of non-conformities < 0.1% is achieved in the course of series production (unless agreed otherwise with respect to the technical capacities of the production), increased inspection or tests will be required (for the "C/C" critical characteristics there must be 100% inspection).

  - For the "C/C" critical characteristics, the implementation of measures is required that have a high probability (and reliability) of detecting a non-conforming product before it gets to ZKL (100% automatic control is recommended).

6. QUALITY ASSURANCE IN SERIES MANUFACTURE

6.1 MANUFACTURING PROCESS MANAGEMENT

Within its own responsibility, the Supplier sets up a concept of manufacturing process control (Control Plan) in order to achieve the agreed objectives and specifications. The inspection activities of the Supplier in product manufacture will be performed in accordance with the Control Plan.

6.2 REQUIREMENTS ON SPECIAL CHARACTERISTICS IN SERIES MANUFACTURE

For special characteristics (critical - "C/C" and significant - "S/C") the suppliers need to demonstrate the permanent (long-term) capability of the process. The results of permanent capability have to be sent by the Supplier at agreed intervals.

A) Permanent (long-term) Process Capability for variable characteristics

- for the analysis of permanent process capability the following has to be obtained:
  - at least 100 measured data (100 products or 100 sections in the case of continuous products – e.g. wires/conductors),
  - of at least 25 samples – logic sub-groups (does not apply for continuous products),
  - of the manufacturing period for 20 manufacturing days as the minimum,
- for the permanent process capability analysis, the technologies specified in the last issue of the SPC - QS 9000 manual will be used,
- for the division of data probability outside the usual division, one of the options listed below will be applied to achieve the permanent process capability index determination (see e.g. "Evaluation of production capability from A to Z – DTO Ostrava – Josef Tošenovský - 1996" for more details):
  - ascertain the classification of the measured data and ascertain the limiting interval value for quality division, where there is 99.73% of the values (this procedure requires deeper knowledge of the probability theory, since finding the division type need not be easy, especially for a low number of values),
  - carry out transformation of the measured data to achieve an approximately normal division, then proceed in the manner described for normal division and finally execute reverse transformation (the difficulty of this path lies in finding a suitable transformation),
  - select a certain type of probability division as an approximation for relevant values, then ascertain the needed values limiting the interval in which there is 99.73% of the values – upper limit (U_p) = 0.135%, lower limit (L_p) = 99.865%, then the following calculations will be used (this procedure is most user–friendly):

$$c_p = \frac{USL - LSL}{U_p - L_p} \qquad c_{pU} = \frac{USL - \tilde{X}}{U_p - \tilde{X}} \qquad c_{pL} = \frac{\tilde{X} - LSL}{\tilde{X} - L_p} \qquad c_{pk} = min(c_{pU}; c_{pL})$$

- the acceptance criteria for the permanent (long-term) process capability:
  - table with decisive criteria:

Characteristic	*Result*	*Interpretation*
Process that looks statistically stable (controlled)		
"C/C"	c_p, $c_{pk} \geq 1.67$	The process meets the ZKL requirements.
"S/C"	c_p, $c_{pk} \geq 1.33$	
"C/C"	c_p, $c_{pk} < 1.67$	The process does not meet the ZKL requirements. High importance must be assigned to improvement of the process and a plan of corrective measures must be worked out and recorded. 100% inspection in place is required until $C_{pk} \geq 1.33$ has been achieved for the "S/C" characteristics, or $C_{pk} \geq 1.67$ has been achieved for the "C/C" characteristics.
"S/C"	c_p, $c_{pk} < 1.33$	
Process that looks statistically unstable (uncontrolled)		
"C/C" "S/C"	---	Depending on the nature of the instability, the process does not have to meet the ZKL requirements. Special causes should be identified, evaluated and removed, where possible. Until $C_{pk} \geq 1.33$ has been achieved for the "S/C" characteristics, until $C_{pk} \geq 1.67$ has been achieved for the "C/C" characteristics, or unless the customer is satisfied, 100% inspection has to be applied, along with more intense selections of SPC. High importance must be assigned to the improvement of the process, and a plan of corrective measures must be worked out and recorded.

  - The confidential interval for 90% reliability/probability of the calculated c_p, c_{pk} values has to be stated to the calculated absolute c_p, c_{pk} values (e.g. in the form as follows: "$c_{pk\ lo} \leq c_{pk} \leq c_{pk\ Up}$).

B) Permanent (long-term) Process Capability for attributive characteristics

- for the analysis of permanent process capability, achievement of the target values to PPM/% of the non-conforming products has to be proved for the deliveries to the customer and for the internal manufacturing process.
- the evaluating indicator is the PPM or % of non-conforming products (products are considered non-conforming for these criteria, for which failure to meet the specifications for the "C/C" or "S/C" characteristics was detected),
- the acceptance criteria for the preliminary (short-term) process capability:
  - table with decisive criteria:

Characteristic	*PPM of non-conforming products for ZKL deliveries*	*Non-conformities in the internal manufacturing process*		*Interpretation*
		PPM	*% of non-conformities*	
"C/C" "S/C"	Achieved target value agreed	< 1,000	< 0.1%	The process meets the ZKL requirements.
	Unachieved target value agreed	≥ 1,000	≥ 0.1%	The process does not meet the ZKL requirements. High importance must be assigned to the improvement of the process and a plan of corrective measures must be worked out and recorded. Increased inspection or testing is required (for the "C/C" critical characteristics 100% inspection is required), until the target PPM values have been achieved, or % of non-conformities during the manufacture and delivery (unless agreed otherwise with respect to the technical capacities of the production).

  - For the "C/C" critical characteristics, the implementation of measures is required that have a highly probability (and reliability) of detecting a non-conforming product before it gets to ZKL (the 100% automatic checkout is recommended).

6.3 INSPECTION OF DELIVERED PRODUCTS

ZKL checks the products from the Supplier in terms of adhering to the quantity and identity, as well as visible defects. The Supplier attaches a Quality Certificate to every single delivery – a certificate according to the ZKL instructions if required by ZKL. The parameters contained in the certificate, specification of these parameters, as well as the measuring method, are defined by ZKL (upon potential consultation with Supplier).

6.4 IDENTIFICATION AND TRACEABILITY

During the product implementation, Supplier has to identify the product using suitable means. ZKL further requests a traceability system to be in place, which enables tracing the products retroactively (the origin of the materials, course of processing, distribution after dispatch, etc.). ZKL requires consistent applying of a supporting "Fi-Fo" system, as well as thorough separation of individual manufacturing batches and charges.

6.5 CONTROL OF NON-CONFORMING PRODUCTS

The Supplier has to ensure that any product that does not conform to the ZKL requirements is identified and controlled to avoid its unintentional use or delivery to ZKL. The Supplier has to keep records of the nature of the non-conformances, as well as of all subsequent measures implemented, including any exceptions granted. The systems managing the Quality of the Supplier have to provide stimulus for analysis of the causes and determination of the corrective and preventive measures based on product non-conformities, leading to the prevention of repetition of non-conformities (especially in the case of repeated non-conformities).

If a non-conforming product is dispatched by the Supplier, ZKL has to be notified immediately. If the product differs from the updated purchasing specifications of ZKL, the Supplier has to apply for a permit of deviation prior to further production and delivery.

The Supplier is liable to the full extent for an instant response if non-conforming products are delivered, by an alternate performance of the claimed delivery, and is obliged to pay any extra costs associated with the settlement of this claimed non-conformity (sorting, extra work, tests, freight costs, etc.).

6.6 CORRECTIVE AND PREVENTIVE MEASURES

Any insufficiencies occurring within ZKL product deliveries (complaints, warnings) shall be removed continuously by the Supplier, the Supplier shall further adopt corrective and preventive measures in order to avoid any repeated occurrence of defects or remove the causes of potential non-conformities.

The Supplier shall have a process of problem settlement in place which will lead to the identification and elimination of basic causes. The method of complaint settlement prescribed by ZKL is the "8D method", within the occurrence of delivery insufficiencies. The following steps are required within the "8D method":

0 - Get ready for the 8D process initialisation (define an instant emergency measure),
1 – put a work team together,
2 - describe the issue (WHAT, WHERE, WHEN, HOW MANY?),
3 – work out and implement temporary measures to mitigate the damage,
4 – define and confirm the basic causes and the place of leakage,
5 – identify and check the corrective measures for the primary causes.
6 – implement permanent corrective measures and make sure they are adhered to,
7 – identify preventive measures,
8 – evaluate and honour the performance and successfulness of the team.

Upon the receipt of a complaint, the Supplier is obliged, within 48 hours, to implement the first four "8D" steps and send the Quality Control Section of ZKL the "8D" programme with steps 0-3 completed. The Supplier is obliged to notify ZKL of the course of the implementation of the remaining steps, to be done at regular intervals (usually once a week, unless ordered otherwise by the ZKL Quality Control Section).

6.7 DOCUMENTS AND RECORDS

Documents and records are controlled and permanently maintained by the Supplier. The Supplier is obliged to file Quality documents and records according to the relevant system regulations. The customer reserves the right to view all documents and records related to the products supplied.

The Supplier undertakes to define and follow the principles applicable for products that are subject to the recording duty (the documents related to the "C/C" characteristics). The obligation to file the tender and proving documents (the documents related to the "C/C" characteristics) in the form of special archiving is ordered as 15 years by the customer. Upon request, the Supplier shall enable ZKL to inspect the following documents. Selection and rating of suppliers:

ZKL expects from its suppliers 100% fulfilment of deliveries in the required quantity, quality, delivery intervals and additional conditions agreed.

Suppliers are selected by the customer and then rated according to their ability to perform the requirements imposed on the products supplied (Quality of Deliveries – PPM, timeliness of the deliveries, quantitative completeness of the deliveries).

The target values of the Suppliers' rating criteria shall be specified yearly by the ZKL Purchasing Department, upon agreement with Supplier (Attachment No. 2). The results of the rating will be provided to the Supplier who, based on the evaluation, shall adopt reasonable measures in order to improve the rating.

The Supplier has to have available an efficient system of the selection and evaluation of its own suppliers.

6.8 EMERGENCY PLAN

If products delivered to the customer have to be recalled, the procedures stipulated in the Emergency Plan need to be followed, as described in Attachment No. 3.

6.9 TECHNICAL REVISION OF THE SUPPLIER

Through technical revision we aim at:

- ensuring the conformity of the design parts and components by means of testing the safety activities,
- reliability audits.

Technical revision is an audit that ensures that the design parts and components were at all times in conformance with the legal requirements, as well as the requirements of ZKL.
Reasons for executing technical revision:

The execution of technical revision is reasonable if the following deviations are detected in the supplier relation:

1. The notification duty towards ZKL is not satisfied; any deviations from the specifications have been detected (reliability/service life audits);

2. Relocation of the production to another manufacturing location has not been notified, release has not been granted;

3. The characteristics of the product have been tested insufficiently within the serial test;

4. Poor-quality performance as a consequence of unreliable internal/external processes;

5. Unreliable processes in the subordinate manufacturing chain;

6. Preventive measure without direct initialisation or without a direct reason.

The technical revision shall be notified by fax or email in a short-term notice (the preceding day) before the visit.

The escalation principle controls the internal processes and reactions. Individual escalation levels are governed by the severity of the defects detected and can be activated during the technical revision or later in the course of working out a problem.

Escalation – 1st degree - green

Direct securing, informing the Quality Control section and development of an improvement programme are necessary.

Escalation – 2nd degree - orange

Dialogue on the "Quality" topic with the competent people with the involvement of the relevant management.

Escalation – 3rd degree - red

Dialogue on "Quality" topic at the top management level.

The technical revision is performed according to the following catalogue of queries:

1. **Does the supplier have available all updated technical documents (drawings, technical delivery conditions, BMG and EMPB release, packaging procedures, etc.)?**

Note: Release of a design sample (BMG), report of first-piece inspection (EMPB), technical guidelines on the documentation (TLD) of characteristics, IMDS databank – system of material data, packaging procedures, etc.

Notice: The releases (passes) are specific for the particular manufacturing point.

2. **Is the history of products/processes recorded, have the customers been notified of any change statuses of the parts/processes and are these demonstrably released by the customer?**

Note: The release of the changes through BMG and EMPB, unless released by means of an allowed deviation, includes process and system changes.

Notice: The releases (passes) are specific for the particular manufacturing point.

3. **Does the organisation perform, within its responsibility for the product, a demonstrable check even of those characteristics that are not identified as important in the technical documentation but are considered crucial in the view of the organisation itself?**

Note: Within the responsibility for the product, the organisation is obliged, beyond the framework of the customer's requirements, to define additional characteristics important for its processes (the control criteria are classification and implementation).

4. **Does the organisation check, during series manufacture according to the control procedure/Control Plan (100% inspection, accidental check, product audit) whether the characteristics are maintained and are the results recorded in a demonstrable manner?**

Note: Control characteristics (the actual and required values), results of reliability checks, product audit, documentation of actual values in the case of variable characteristics.

5. **Are the applied checkout procedures and checkout means for checking the characteristics demonstrably convenient, are the checkout capacities (internal/external), available at the particular point of manufacture, sufficient?**

Note: The documents related to the gauge capability, as well as agreements with external labs of service provision, and test certificates.

6. **Can the process capability be documented and are sufficient securing provisions implemented in case this is not followed?**

Note: In series manufacture the following applies: Cpk is higher than or equal to 1.33.

7. **Does the organisation implement the provisions of the improvement programmes and is the efficiency of the implemented measures documented?**

Note: The provisions based on the internal/external process audits and other requests and complaints of the customers.

8. **Does the organisation perform regular internal process audits and requalification tests and does the test contain characteristics that are relevant to the customer?**

Note: Internal process audit (own manufacture), requalification tests, regularity ensured through planning, the scope conforms to EMPB, but without submission at the customer.

9. **Does the organisation demonstrably know the chain of creating values of its suppliers and is this chain ensured?**

Note: It has to operate across the entire manufacturing-process chain, it is ensured, among other things, by means of audits and/or certificates (VDA 6.1, ISO/TS 16949:2002).

10. Are there any demonstrable written agreements with suppliers related to the checkout of important characteristics and are these supervised appropriately?

Note: Approved quality agreements, contract-based control procedures.

11. Are the staff (operators/auditors) demonstrably competent for the execution of the tasks imposed?

Note: In the case of special tasks (X-ray, checks of cracks, welding, etc.), qualification certificates are required, for the remaining inspection activities (self-checks of workers, final inspection) training is necessary, as well as demonstration of training and qualification.

12. Is the keeping of the documentation of D/TLD parts evaluated in regular internal audits?

Note: Planning and performance of D-audits, if parts with special characteristics are manufactured for special archiving. Verification of classification should be executed at least once a year. The query is irrelevant as long as no D-parts are manufactured.

Test Report

A test report is worked out for a selected part only. The following instructions contained in the Test Report form must be adhered to in the processing:

The "Characteristics" column

Listing the control characteristics

The "D/TLD parts" column

Cross if the D-characteristic is a control characteristic, as well.

The "Cpk values" column

Actual values for the relevant characteristic.

The "100% check" column

Cross if the characteristic is monitored within the 100% check.

The "Accidental check" column

State the number of checked pieces per unit (quantity/time). For example: 3 items/hour or 5/1,000 items, if the volume of production per shift is specified.

The "Product audit" column

State the frequency of performance, e.g. at least once a month (depends on the total quantity of items).

The "Requalification", "Test of design part" and "First-piece pass" columns

The detected condition of the part is recorded in the field using the characters below:

"X" accomplished

"E" necessary but has not been done yet

"-" is out of the question

Report

Upon the performance of the technical revision the ZKL auditor works out a total report to be sent to the Supplier within 14 days in order to determine the improvement programme. The Supplier shall develop the improvement programme and send it to the ZKL auditor within 14 calendar days from the receipt of the report, at the latest. Once the improvement programme has been implemented, the Supplier shall notify the ZKL auditor who checks the efficiency of this improvement programme.

7. SAFETY AND PROTECTION OF THE ENVIRONMENT

All products delivered by Supplier to ZKL must regard the existing legal and safety restrictions applicable to banned, toxic and hazardous products, as well as the requirements conforming to the environment, along with the electric and electromagnetic regulations existing in the country where the product is manufactured and sold.

If hazardous substances are supplied (e.g. chemicals), local regulations have to be followed in terms of the labelling and transport of hazardous materials, especially the regulations specifying correct labelling of the packaging materials. Before each delivery, Supplier must provide ZKL with a safety data sheet containing the required information. The packaging must be designed to use only a single type of packaging material that can be separated and recycled easily.

8. ABBREVIATIONS AND DEFINITIONS

Special characteristics - Important characteristics of the product or process determined by ZKL and the Supplier on the basis of the product and process knowledge. Special characteristics are divided into two groups, as follows:

a) "C*ritical characteristic)* - "C/C"

Is a characteristic of a product or process, the deviation from which might jeopardise the safety, health and adherence to legal requirements.

Above the characteristic there is the following symbol ⌒, or a "C/C" or a relevant customer symbol stand in front of the character, as the case may be.

b) "Significant characteristic - "S/C"

Is a characteristic of a product or process, the deviation from which might affect the customer's satisfaction (final user, assembly plant, ZKL, subsequent production), such as the capability to be assembled, functionality, workability, appearance, etc.

Before the characteristic there is an "S/C" symbol or a relevant customer symbol, as the case may be.

Fi-Fo - "First-in-first-out" – the system of organisation of the acceptance and issuance of products that ensures that the products accepted with the oldest date are released first.

SPC - Statistical process control

FMEA - Analysis of methods and consequences of failures

PPM - "Part per Million" - an indicator of process capability related to non-conforming products.

a) PPM of the internal Supplier's process

PPM = 1,000,000 x the number of non-conforming products/number of products manufactured

b) PPM from the deliveries supplied to ZKL (non-conformances detected in ZKL and at the customer's)

PPM = 1,000,000 x the number of non-conforming products/number of products delivered

PPM does not include rejected samples in the Supplier's product and process approval by ZKL workers.

Exception - Permit to use or release a product that does not conform to the specified requirements.

Permit of exception - Permit to deviate from the originally specified product requirements prior to the implementation.

c_m, c_{mk} - Indices of machinery capability.

P_p, P_{pk} - Indices of preliminary (short-term) Manufacturing Process Capability (for the evaluated characteristic).

c_p, c_{pk} - Indices of permanent (long-term) Manufacturing Process Capability (for the evaluated

characteristic).

Confidence interval - A range within which the correct value of the calculated statistics lies with given reliability (probability).

9. RELATED DOCUMENTS

ISO 9001:2000	"Quality Management System – Requirements"
ISO/TS 16 949:2002	"Quality Management System – Special requirements on the use of ISO 9001:2000 in organisations providing series manufacture and manufacture of spare parts in the automotive industry"
ISO 14 001:2005	"Environment Management System – Specifications with user manuals"
VDA 6.3	"Process Audit"
APQP	"Modern Product Quality Planning and Control Plan" according to QS 9000
VDA 4.3	"Quality Assurance Before Series Manufacture – Project Planning"
VDA 2	"Quality Assurance of Deliveries"
PPAP	"Process of Part Approval for Production" according to QS 9000
MSA	"Measuring System Analysis" according to QS 9000
VDA 5	"Control Process Capability"
SPC	"SPC" according to QS 9000

"Evaluation of Production Capability from A to Z"– DTO Ostrava - Josef Tošenovský - 1996

10. ATTACHMENTS

Attachment No. 1	"Catalogue of queries for self-audit"
Attachment No. 2	"Self-audit of the Supplier – Report"
Attachment No. 3	"Emergency plan"
Attachment No. 4	"Specification for demonstration of product characteristics"
Attachment No. 5	"Requirements and targets for the Supplier"

Continuation from the second page of the cover

RECORD OF BECOMING FAMILIARISED WITH THE DOCUMENT:

Issue No.:	Change No. 1	Change No. 2	Change No. 3	Change No. 4	Change No. 5
Name, signature, date	Signature, date	Signature, date	Signature, date	Signature, date	Signature, date

Printed on: 3/3/2009

Instructions for use of the document

Becoming familiarised	The supervisor shall make all subordinate employees, who need to work with it, familiarised with the document. The document shall be communicated in a training or the employees shall study it themselves. They shall record the fact that they have become familiarised with the document on the second or third page of the document cover.
Check	The supervisors are obliged to check that the procedures stipulated in this document have been adhered to and, if any non-conformities are found, they shall submit proposals for its completion or modification.
Changes	Any changes and/or amendments shall be recorded in the survey on the second page of the document cover.
Revisions	Once a year, the document author is obliged to revise the validity of the document and record the result of this revision with the document administrator.
Filing	The document has to be filed to be available to all employees who need it for the execution of their function. The document is the property of the ZKL joint stock company.
Shredding	The document is not subject to shredding, unless void.